JVC

SERVICE MANUAL

SURROUND SOUND HEADPHONE ADAPTOR

SU-DH1-J/E

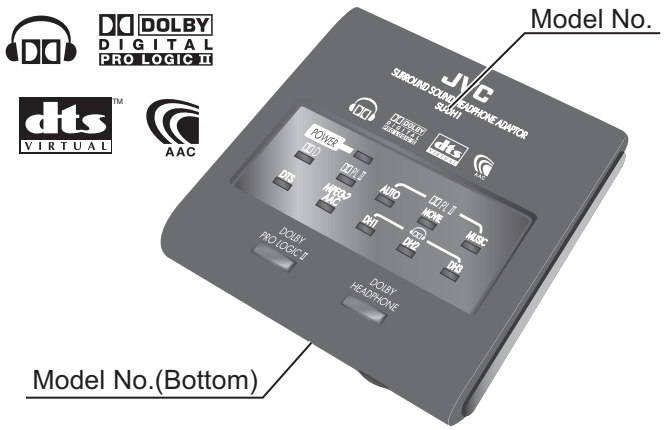


TABLE OF CONTENTS

1 DISASSEMBLY 1-3
2 TROUBLESHOOTING 1-4

COPYRIGHT © 2006 Victor Company of Japan, Limited

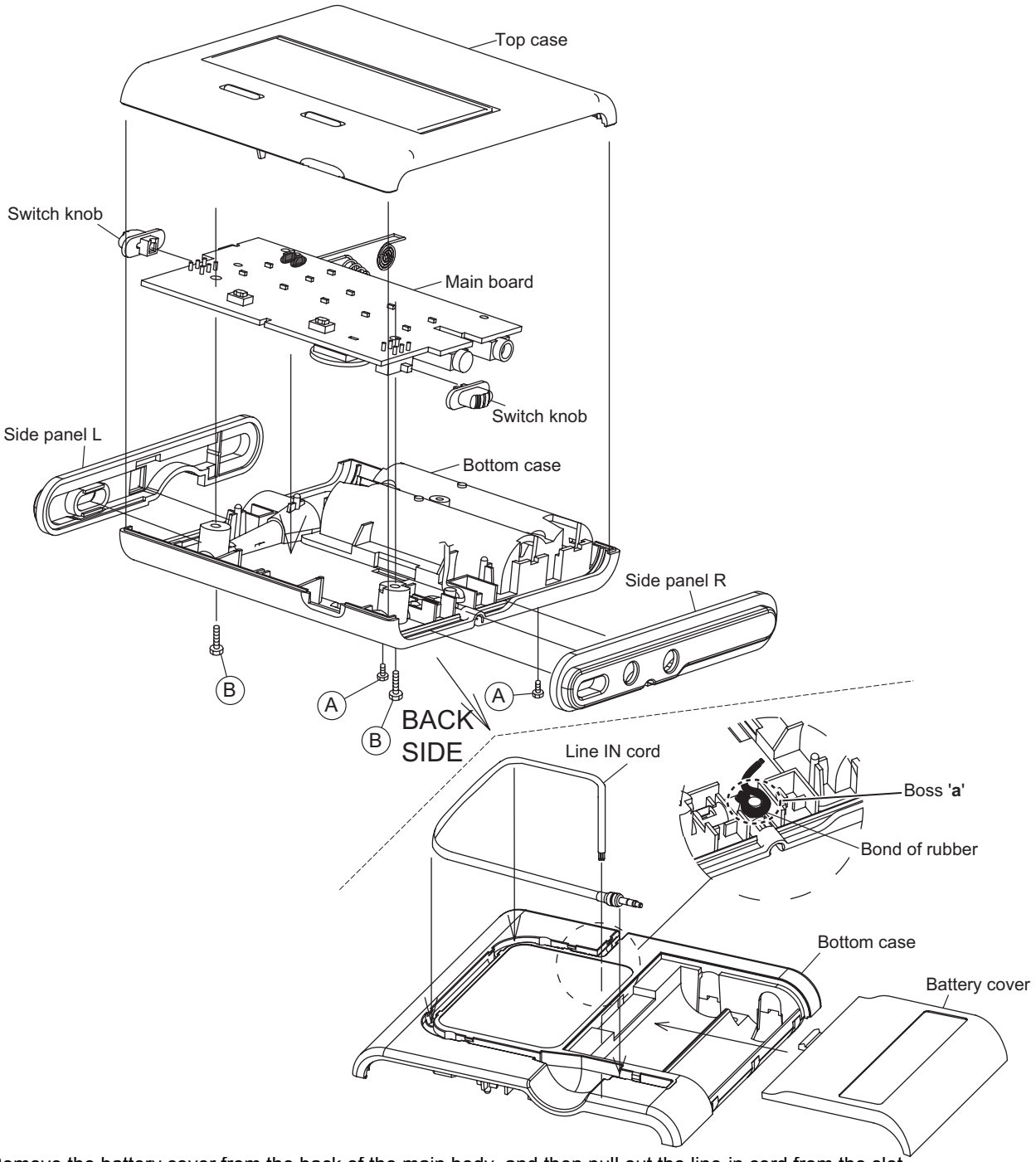
No.XC045
2006/3

SPECIFICATION

SU-DH1-J/E	
Playable format	Dolby Digital (Dolby Surround EX), Dolby Pro Logic II, DTS (DTS-ES 6.1ch),MPEG-2 AAC, PCM (Fs=44.1kHz, 48kHz)
Surround function	Dolby Headphone (DH1/DH2/DH3), Dolby Pro Logic II (AUTO/MOVIE/MUSIC)
Input terminals	Optical digital signal mini jack x 1, LINE IN signal cord with Gold plated stereo mini plug (3.5mm) x 1
Headphone output	Stereo mini jack x 1
Power requirements	Alkaline AA battery (DC 1.5V) x 2
Battery life	approx. 10hours (using Alkaline AA battery), approx. 2.5hours (using Manganese AA battery)
Dimensions	82mm x 20mm x 86mm (W/H/D)
Mass	approx. 99g (include Manganese AA battery)
Accessories	Manganese AA battery (R6P) x 2 (for initial use), Carrying pouch x 1, Dual plug adaptor x 1

SECTION 1
DISASSEMBLY

1.1 Disassembly method



(1) Remove the battery cover from the back of the main body, and then pull out the line-in cord from the slot.
(2) From the back of the main body, respectively remove the two screws **A**, and another two screws **B** attaching the bottom case.
(3) Turn the main body back to the original position, and then remove the top case.
(4) When removing the main board by lifting it up, the side panels L/ R will also be removed.

*** Please fix boss 'a' part and the code in the bond of rubber after the code ties to boss 'a' part of the projection of the bottom case when you install line in cord in the bottom case.**

*** When attaching the side panels L/ R, make sure to confirm that each switch (SW1, SW2) on the main board is firmly placed in the hole of the each switch knob.**

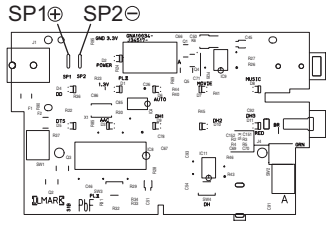
SECTION 2
TROUBLESHOOTING

2.1 Measuring instrument

- DC power supply (3V 500mA can be output.)
- Audio signal generator
- Vacuum Tube Volt Meter
- Oscilloscope
- DVD Player with optical digital output

2.2 About power supply

Please set the output voltage of the DC power supply to 3V, connect with SP1 and SP2 on the substrate as follows, and do the confirmation work.
SP1: The plus output of the DC power supply is connected.
SP2: Ground of the DC power supply is connected.

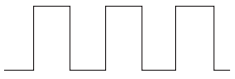


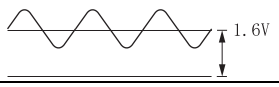
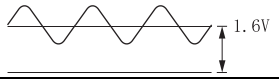
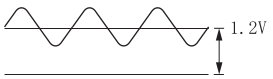
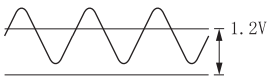
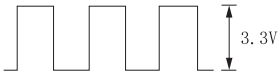
2.3 Analog signal input level

500mVrms

2.4 YES → Normal
NO → The voltage and the waves are abnormal.

2.5 Check method

Symptom	Check point		Voltage and waves when it is normal	Check part and breakdown parts
The power supply is not turned on.	1	Both sides of F2	DC approx. 0V	NO→ Defect of F2 YES→ check of 2
	2	IC1 8pin	DC approx. 3.3V	NO→ Defect of IC1 YES→ check of 3
	3	IC6 4pin	DC approx. 1.3V	NO→ Defect of IC6 YES→ check of 4
	4	IC5 1pin	DC approx. 3.3V	NO→ Defect of IC5 YES→ check of 5
	5	IC8 10pin	f=10MHz	NO→ Defect of IC8 or Check on circuit in surrounding. YES→check of 6
	6	IC8 7pin	DC approx. 3.3V	NO→ Defect of IC8 or Check on circuit in surrounding. YES→ check of 7
	7	IC7 3pin	f=12.288MHz 	NO→ Defect of IC7 or Check on circuit in surrounding. YES→ Defect of IC2 or Check on circuit in surrounding.

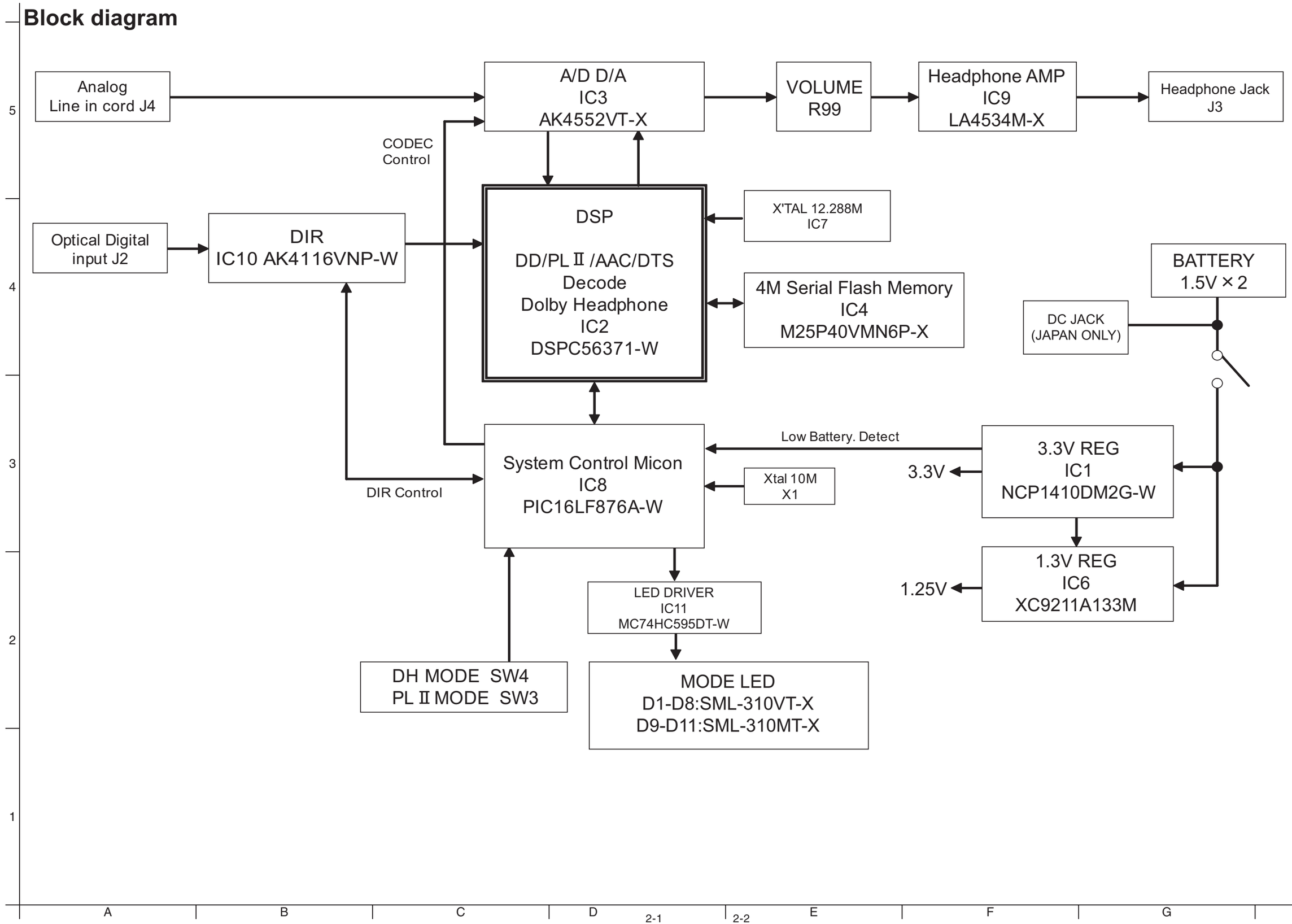
Symptom	Check point		Voltage and waves when it is normal	Check part and breakdown parts
Analog input : The sound is not emitted.	8	C5, C6 Positive pin	Sine wave 	NO→ Connected check from J4 to C4, C5 YES→ Check since 9
	9	C28, 29 Positive pin	Sine wave 	NO→ Defect of IC2, IC3 YES→ Check since 10
	10	IC9 2pin (L ch),4pin (R ch) (The volume is confirmed in the maximum.)	Sine wave 	NO→ Defect of R99 and Check on circuit in surrounding. YES→ Check since 11
	11	IC9 10pin	DC approx. 3.3V	NO→ Check of Q4, Q1, Q5, IC8 YES→ Check since 12
	12	IC9 9pin (L ch),7pin (R ch) (The volume is confirmed in the maximum.)	Sine wave 	NO→ Defect of IC9 and Check on circuit in surrounding. YES→ J3 Check on circuit in surrounding.
Digital input : The sound is not emitted.	13	IC10 1pin (The DVD player etc. are connected with an optical, digital input.)		NO→ Defect of J2 YES→ IC10 and Check on circuit in surrounding.
LED doesn't light. (D4 to D11)	14	IC11 13pin	DC approx. 0V	NO→ Defect of IC8 and Check on circuit in surrounding. YES→ Defect of IC11 and Check on circuit in surrounding.

JVC
Victor Company of Japan, Limited
ACCESSORIES CATEGORY 1644, Shimotsuruma, Yamato, Kanagawa 242-8514, Japan

(No.XC045)

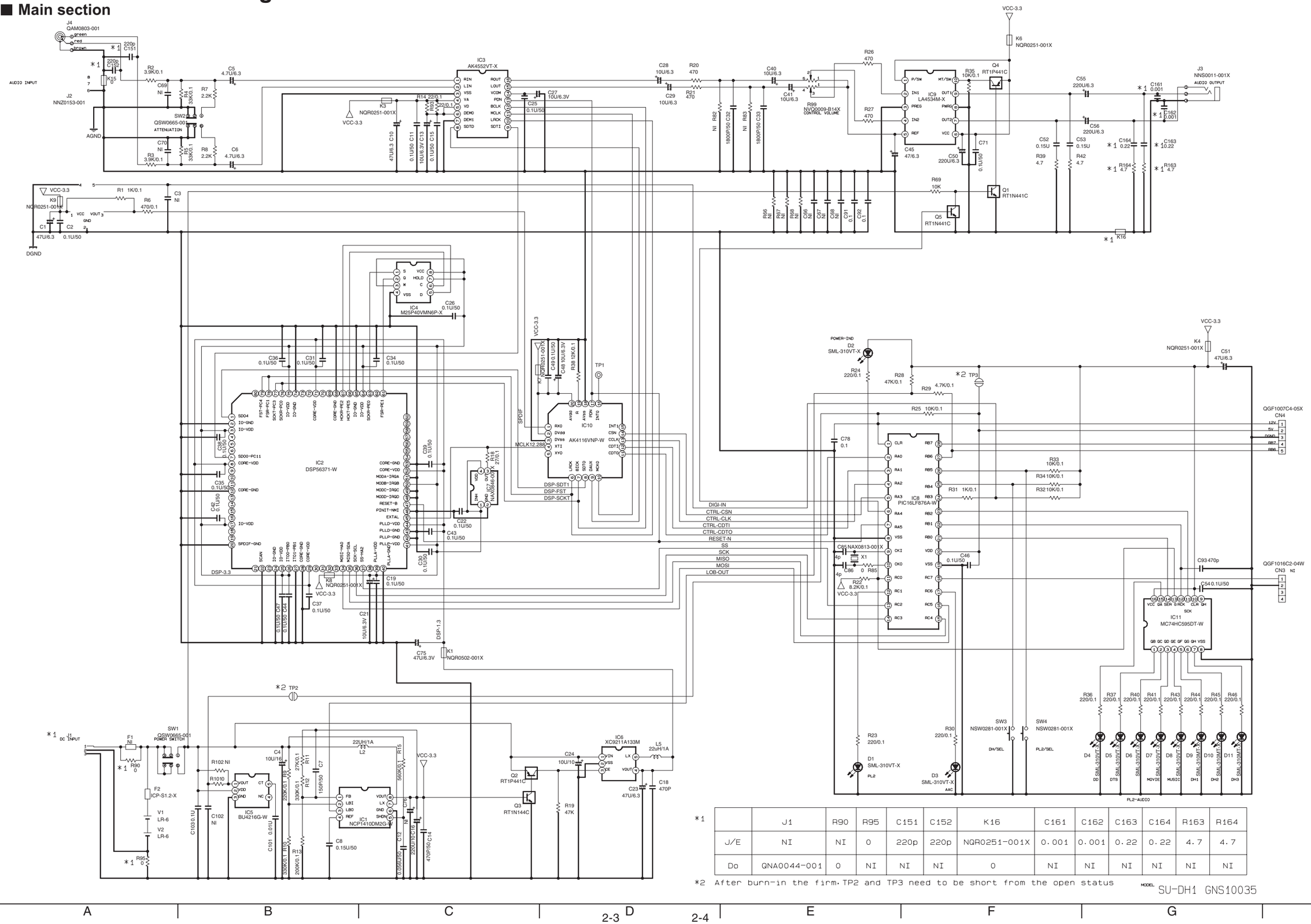
Printed in Japan
VPT

Block diagram



Standard schematic diagram

■ Main section



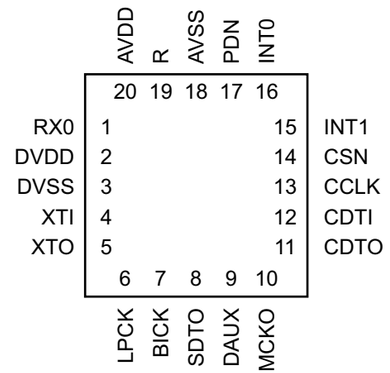
*1		J1	R90	R95	C151	C152	K16	C161	C162	C163	C164	R163	R164
	J/E	NI	NI	0	220p	220p	NQR0251-001X	0.001	0.001	0.22	0.22	4.7	4.7
	Do	QNA0044-001	0	NI	NI	NI	0	NI	NI	NI	NI	NI	NI

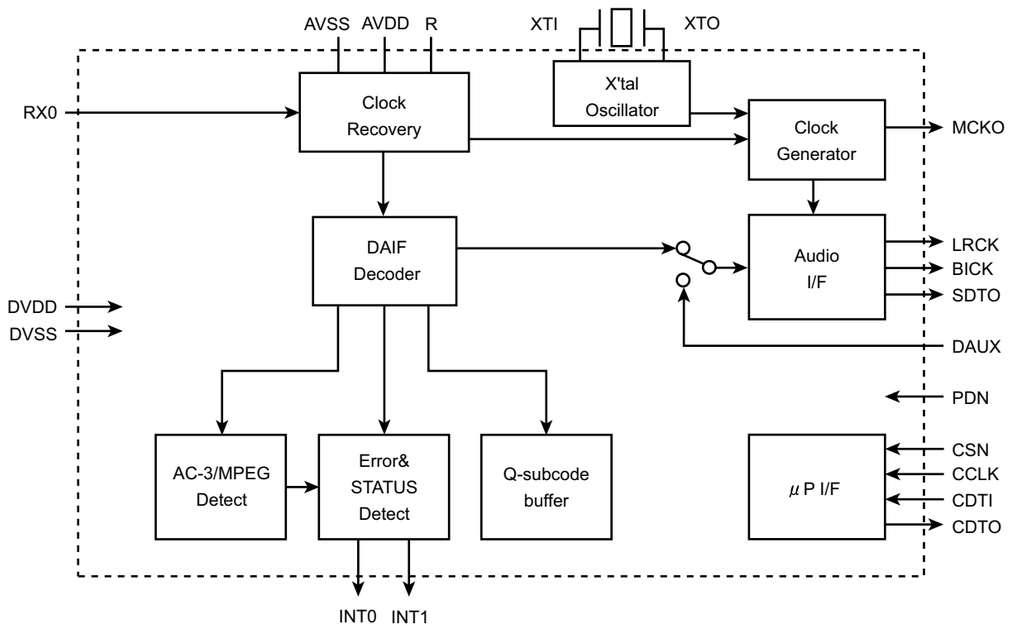
*2 After burn-in the firm, TP2 and TP3 need to be short from the open status

MODEL SU-DH1 GNS10035

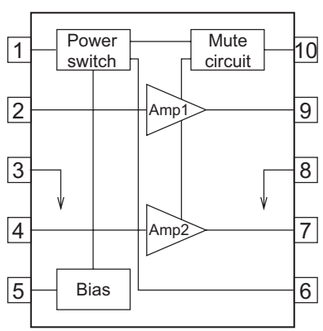
Description of major ICs

■ AK4116VNP-W(IC10):Digital audio receiver

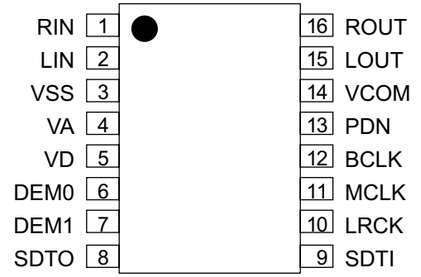


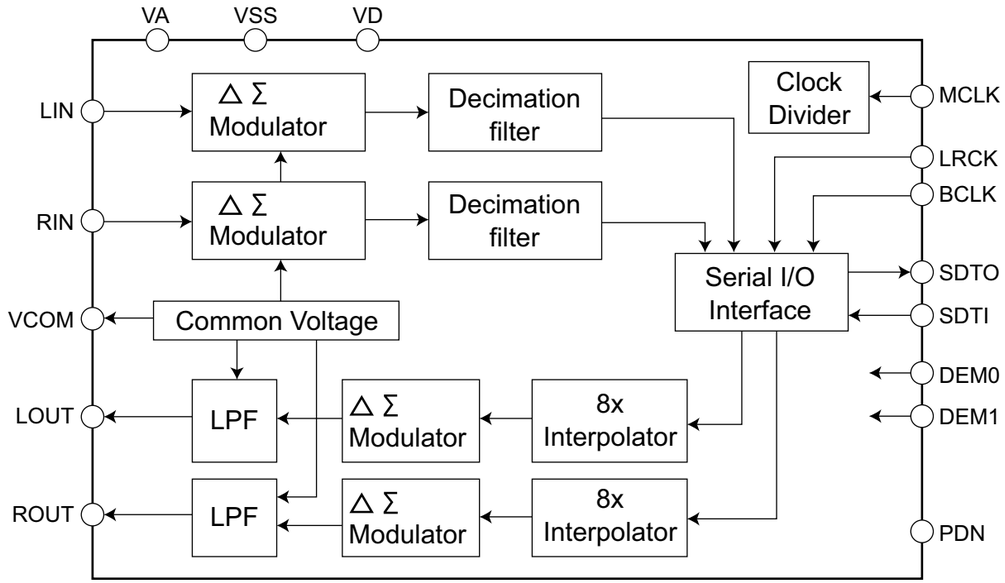


■ J47862-001(IC9):Stereo power amplifier

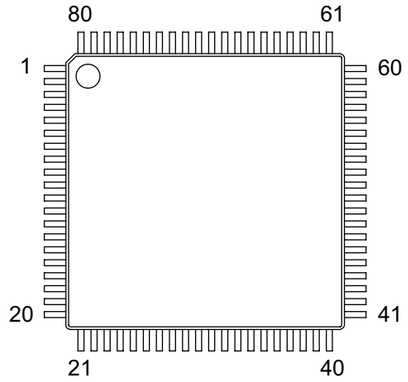


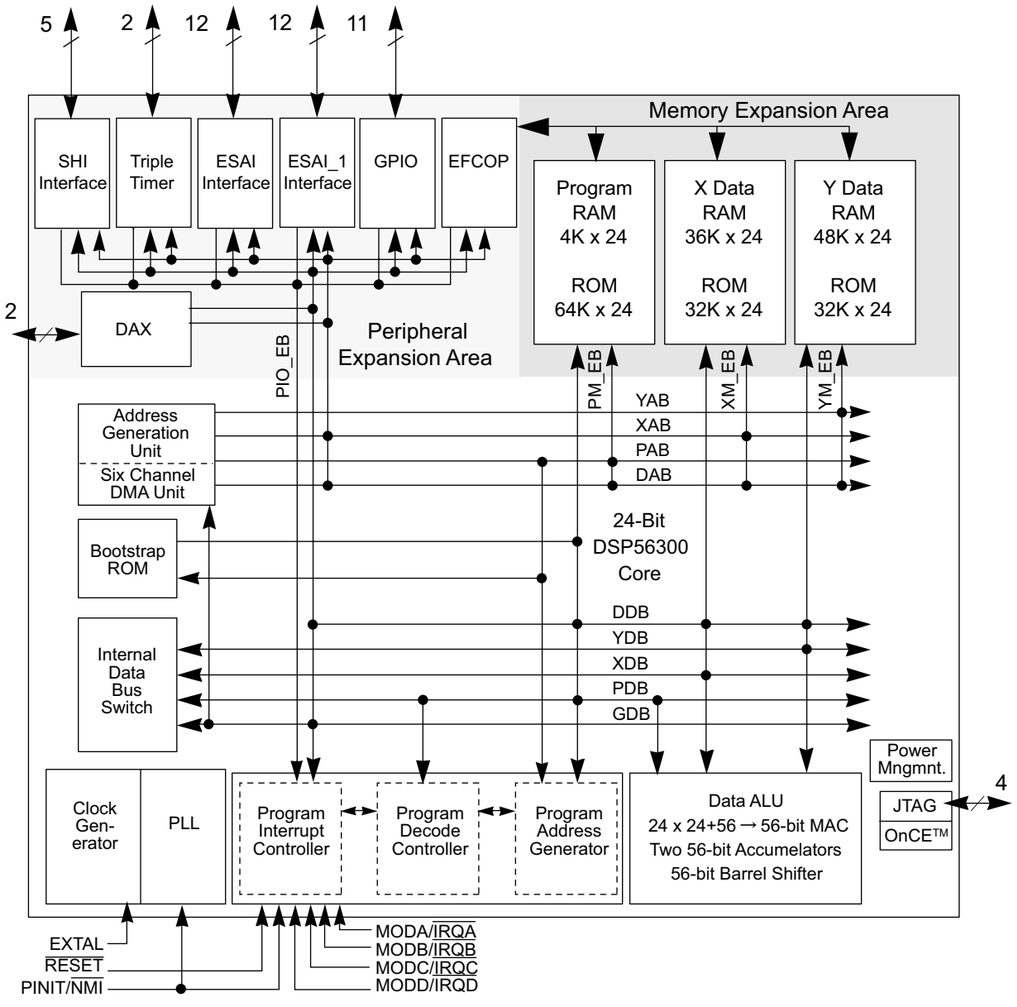
■ AK4552VT-X(IC3):AD/DA Converter



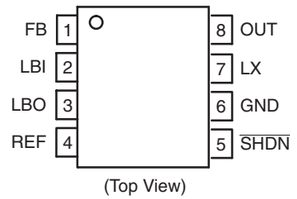


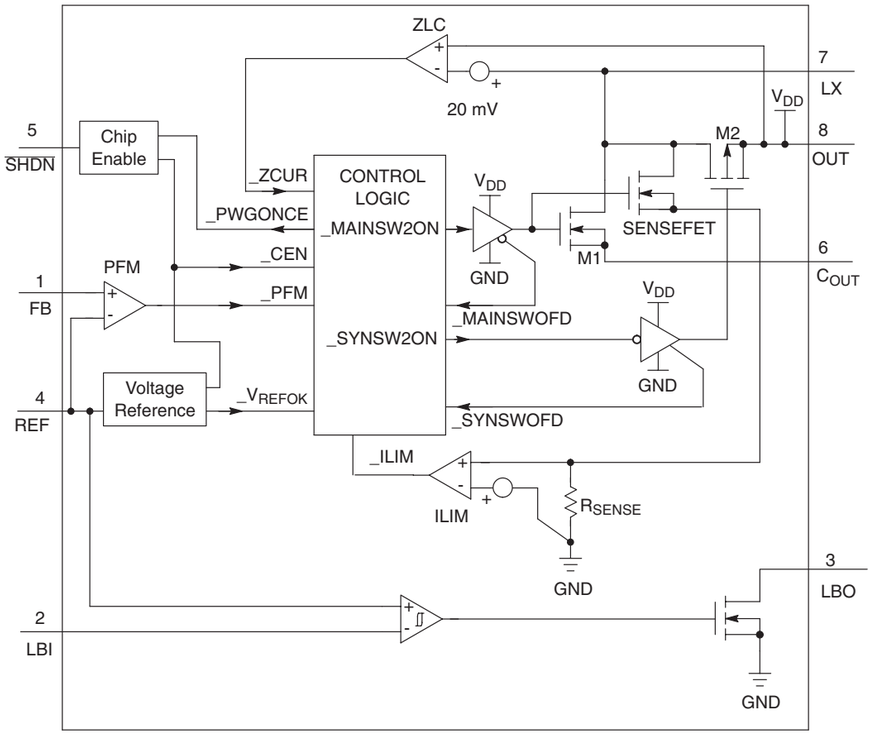
■ DSPC56371AF180(IC2):DSP



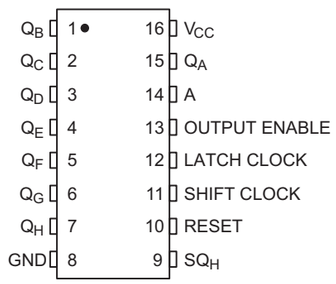


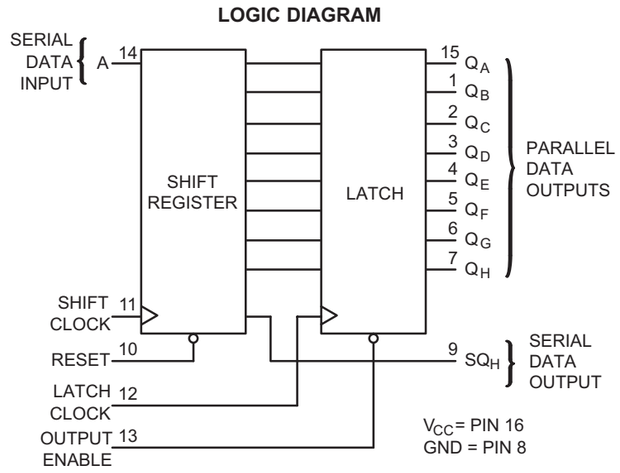
■ J47866-001(IC1):DC-DC Converter



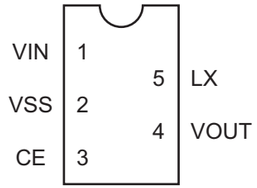


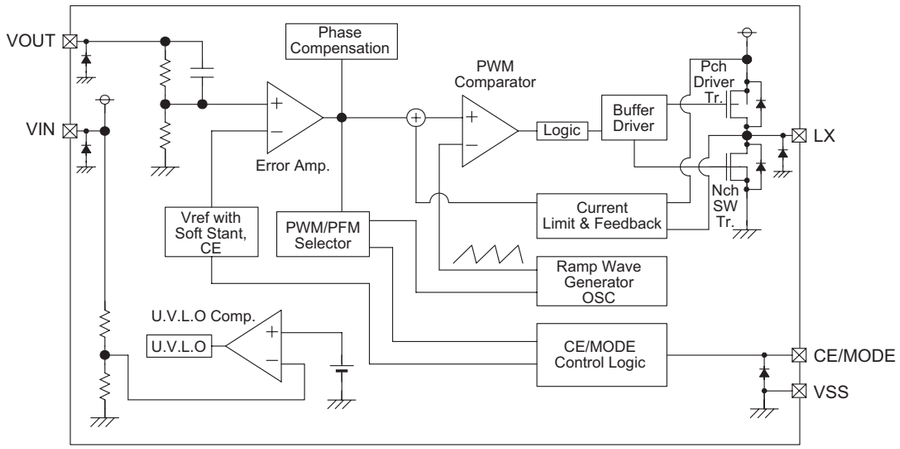
■ J47872-001(IC11):LED Controller



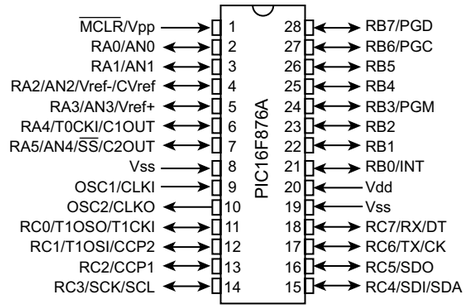


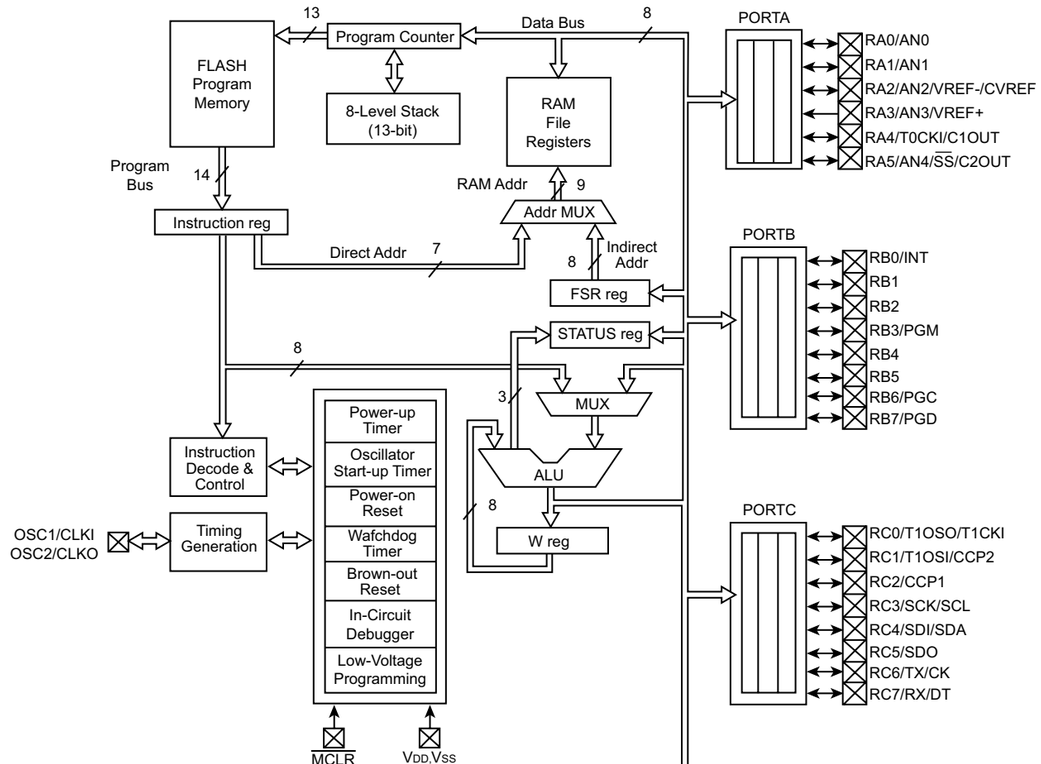
■ J47868-001(IC6):DC-DC Converter





■ J47870-001(IC8):Flash microcontroller



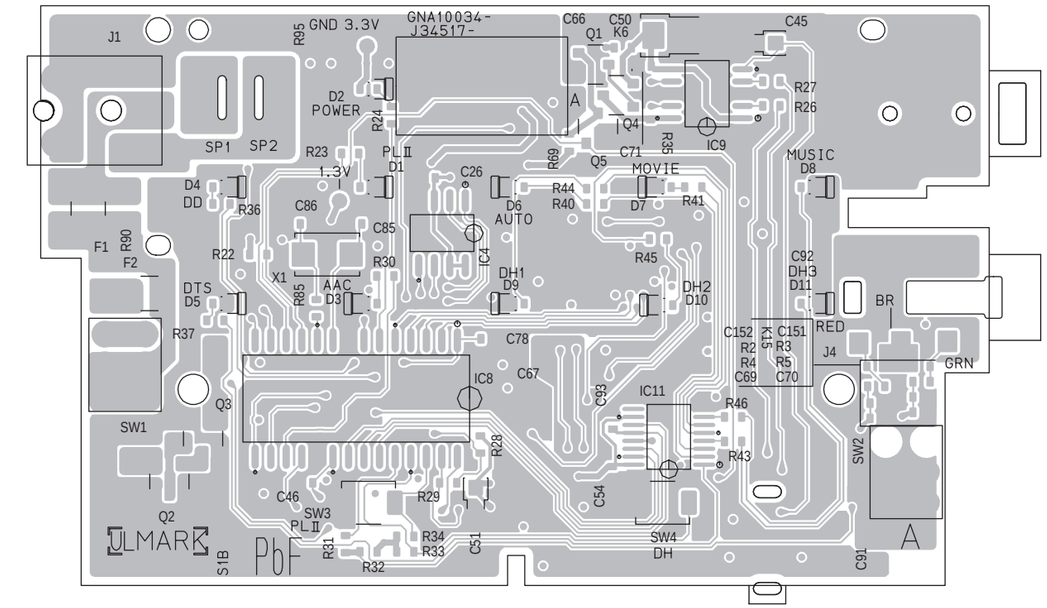


Device	Program Flash	Data Memory	Data EEPROM
PIC16F876A	8K words	368 Bytes	256 Bytes

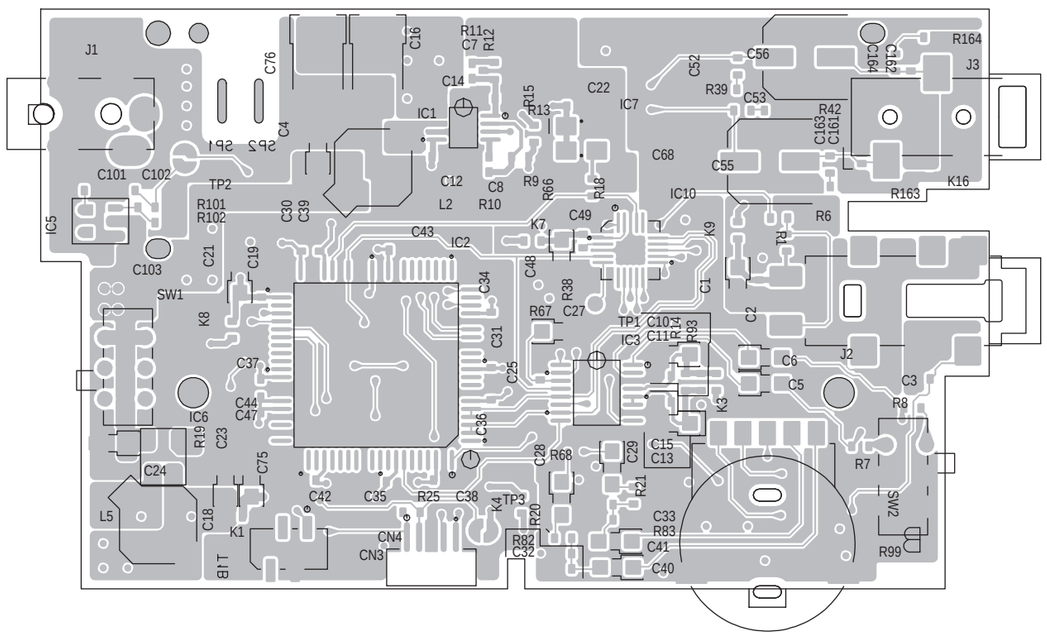
Printed circuit board

■ Main board

Forward side



Reverse side



PARTS LIST

[SU-DH1-J/E]

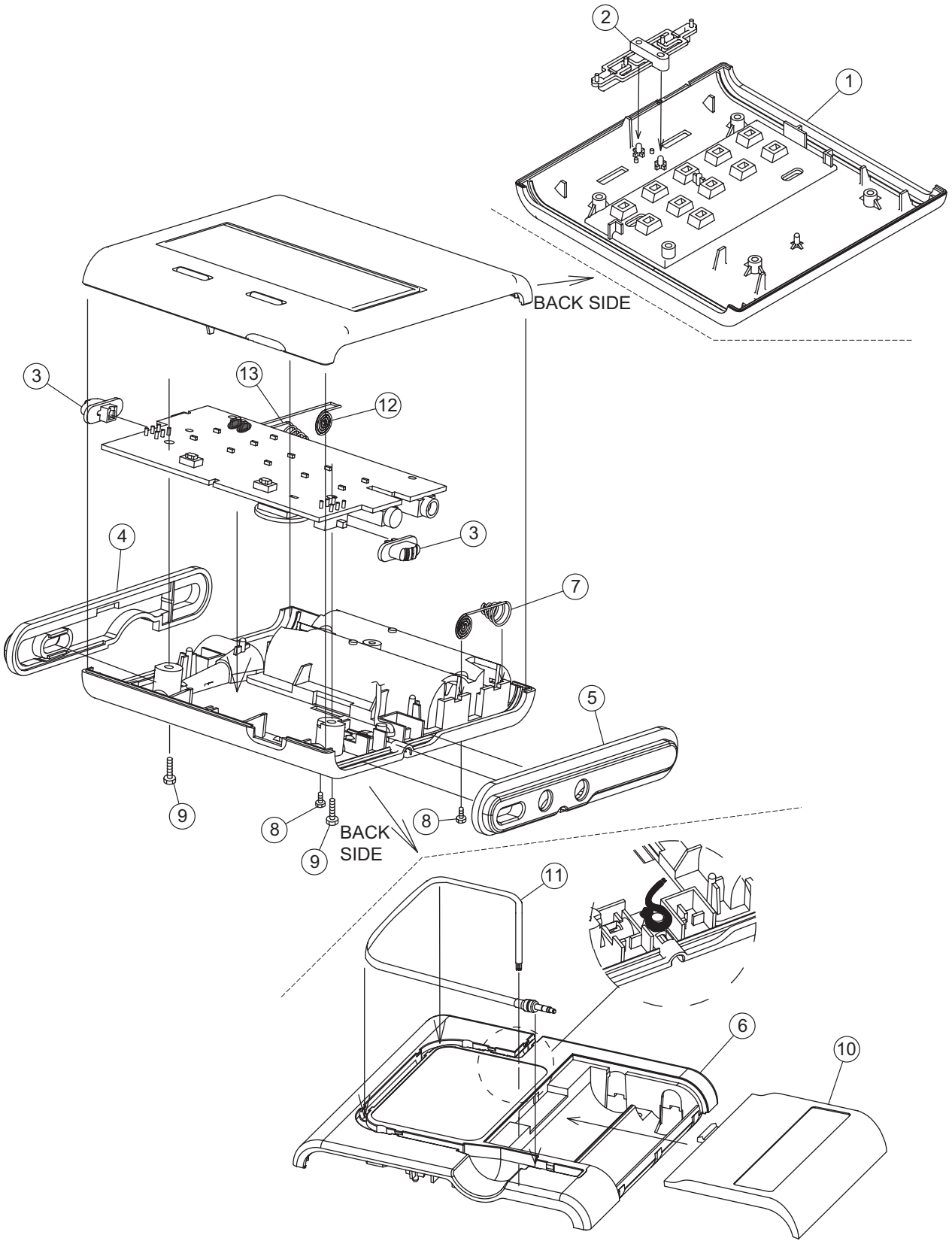
* All printed circuit boards and its assemblies are not available as service parts.
* (x_) in a description column shows the number of the used part.

- Contents -

Exploded view of general assembly and parts list ---------- 3-2
Electrical parts list ---------- 3-4
Packing materials and accessories parts list ---------- 3-6

Exploded view of general assembly and parts list

Block No.M1MM



General assembly

Block No. [M][1][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	J22303-001	TOP CASE ASSY	TOP CASE+WINDOW	
2	J34513-001	FUNCTION BUTTON		
3	J34514-001	SWITCH KNOB	POWER & ATTENUA(x2)	
4	J34656-001	SIDE PANEL L		
5	J34512-001	SIDE PANEL R		
6	J22306-001	BOTTOM CASE ASSY	BOTTOM CASE+LABEL	E
6	J22305-001	BOTTOM CASE ASSY	BOTTOM CASE+LABEL	J
7	J47854-001	SPRING-R	FOR BATTERY(+ -)	
8	QYSPSF2004NA	TAP SCREW	BATT BOX -TOP CASE(x2)	
9	QYSPSF2006MA	TAP SCREW	BOTTOM CASE -TOP CASE(x2)	
10	J47877-001	BATTERY COVER ASSY		
11	J47861-001	AUDIO CABLE		
12	J47855-001	SPRING-L	POSITIVE	
13	J47856-001	SPRING-L	NEGATIVE	

Electrical parts list

Main board

Block No. [0][1]

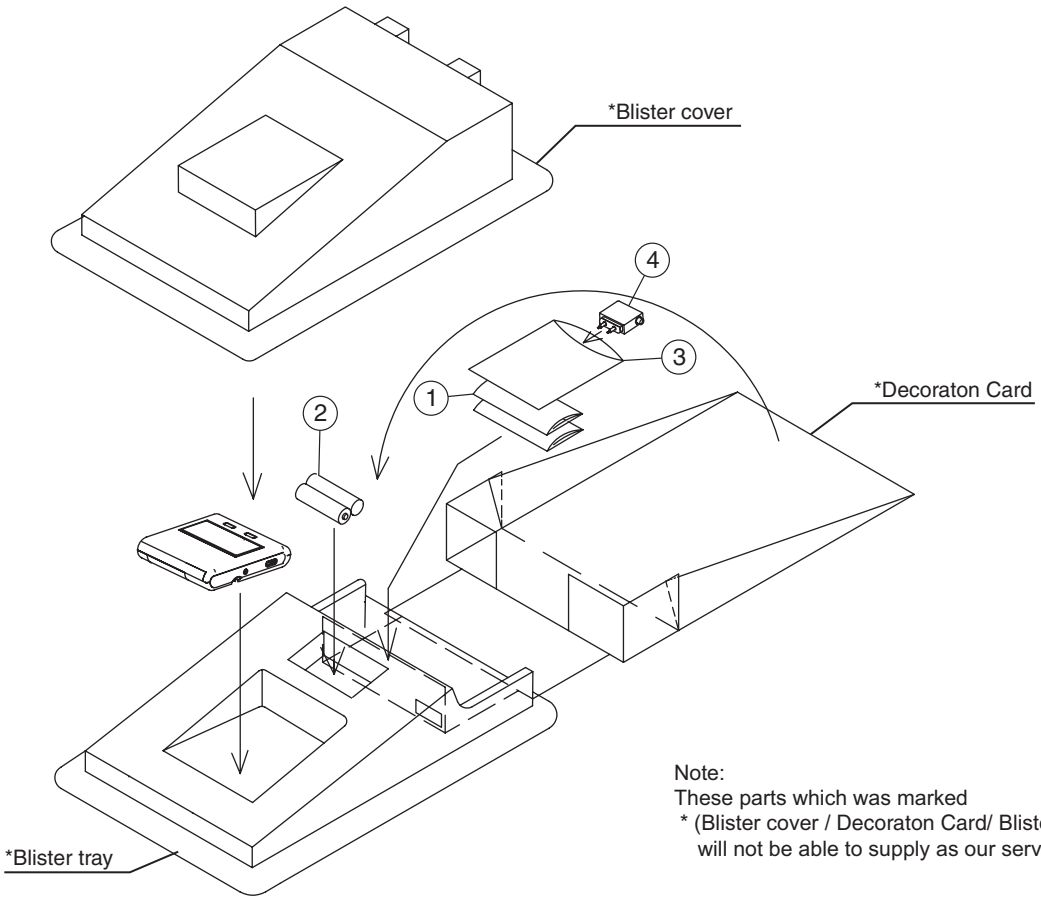
⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	J47859-001	MAIN CB ASSY	Main board assembly is not supplied.	
IC1	J47866-001	IC		
IC2	DSPC56371AF180	IC	Not supplied.(Consultation with CS groupe)	
IC3	AK4552VT-X	IC		
IC4	J47864-001	IC(FLASH)		
IC5	J47867-001	IC		
IC6	J47868-001	IC		
IC7	J47865-001	OSCILLATOR		
IC8	J47870-001	IC		
IC9	J47862-001	IC		
IC10	AK4116VNP-W	IC		
IC11	J47872-001	IC		
Q1	RT1N441C-X	DIGI TRANSISTOR		
Q2	RT1P441C-X	DIGI TRANSISTOR		
Q3	RT1N144C-X	DIGI TRANSISTOR		
Q4	RT1P441C-X	DIGI TRANSISTOR		
Q5	RT1N441C-X	DIGI TRANSISTOR		
D1	SML-310VT-X	LED		
D2	SML-310VT-X	LED		
D3	SML-310VT-X	LED		
D4	SML-310VT-X	LED		
D5	SML-310VT-X	LED		
D6	SML-310VT-X	LED		
D7	SML-310VT-X	LED		
D8	SML-310VT-X	LED		
D9	J47873-001	LED		
D10	J47873-001	LED		
D11	J47873-001	LED		
C1	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C2	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C4	J47875-001	TA E CAPACITOR	10uF 16V M	
C5	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C6	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C7	NCB31HK-151X	C CAPACITOR	150pF 50V K	
C8	NCB31AK-154X	C CAPACITOR	0.15uF 10V K	
C10	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C11	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C12	NCB31EK-563X	C CAPACITOR	0.056uF 25V K	
C13	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C14	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C15	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C16	J47876-001	TA E CAPACITOR	220uF 10V M	
C18	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C19	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C21	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C22	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C23	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C24	NBE21AM-106X	TA E CAPACITOR	10uF 10V M	
C25	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C26	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C27	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C28	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C29	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C30	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C31	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C32	NCB31HK-182X	C CAPACITOR	1800pF 50V K	
C33	NCB31HK-182X	C CAPACITOR	1800pF 50V K	
C34	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C35	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C36	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C37	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C38	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C39	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C40	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C41	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C42	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C43	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C44	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C45	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C46	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C47	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C48	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C49	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C50	NBE50JM-227X	TA E CAPACITOR	220uF 6.3V M	
C51	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C52	NCB31AK-154X	C CAPACITOR	0.15uF 10V K	
C53	NCB31AK-154X	C CAPACITOR	0.15uF 10V K	
C54	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C55	NEAF0JM-227X	E CAPACITOR	220uF 6.3V M	
C56	NEAF0JM-227X	E CAPACITOR	220uF 6.3V M	
C71	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C75	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C78	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C85	NDC31HJ-4R0X	C CAPACITOR	4pF 50V J	
C86	NDC31HJ-4R0X	C CAPACITOR	4pF 50V J	
C91	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C92	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C93	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C101	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C103	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C151	NCB31HK-221X	C CAPACITOR	220pF 50V K	
C152	NCB31HK-221X	C CAPACITOR	220pF 50V K	
C161	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C162	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C163	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C164	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
R1	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R3	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R4	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R5	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R6	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R7	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R8	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R9	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J	
R10	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R11	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R12	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R13	NRSA63J-204X	MG RESISTOR	200kΩ 1/16W J	
R14	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J	
R15	NRSA63J-564X	MG RESISTOR	560kΩ 1/16W J	
R18	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J	
R19	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R20	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R21	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R22	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J	
R23	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R24	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R25	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R26	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R27	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R28	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R29	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R30	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R31	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R32	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R33	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R34	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R35	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R36	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R37	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R38	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R39	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R40	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R41	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R42	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R43	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R44	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R45	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R46	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R69	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R85	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R93	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J	
R95	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R99	J47863-001	V RESISTOR		
R101	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R163	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R164	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
L2	NQL52EM-220X	COIL	22uH M	
L5	NQL52EM-220X	COIL	22uH M	
CN4	QGF1007C4-05X	CONNECTOR	FFC/FPC (1-5)	
F2	ICP-S1.2-X	IC PROTECTOR	1.2A	
J2	J47860-001	PIN JACK		
J3	J47914-001	PIN JACK		
K1	NQR0502-001X	FERRITE BEADS		
K3	NQR0251-001X	FERRITE BEADS		
K4	NQR0251-001X	FERRITE BEADS		
K6	NQR0251-001X	FERRITE BEADS		
K7	NQR0251-001X	FERRITE BEADS		
K8	NQR0251-001X	FERRITE BEADS		
K9	NQR0251-001X	FERRITE BEADS		
K15	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K16	NQR0251-001X	FERRITE BEADS		
SW1	QSW0665-001	SWITCH(SLIDE)		
SW2	QSW0665-001	SWITCH(SLIDE)		
SW3	J47874-001	SWITCH(TACT)		
SW4	J47874-001	SWITCH(TACT)		
X1	J47871-001	CRYSTAL		

Packing materials and accessories parts list

Block No.M2MM



Note:
These parts which was marked
* (Blister cover / Decoraton Card/ Blister tray)
will not be able to supply as our service parts.

Packing and accessories

Block No. [M][2][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	LNT0057-001A	INST BOOK		E
1	LNT0056-001A	INST BOOK		E
1	LNT0055-001A	INST BOOK		J
2	----------	BATTERY	R6TYPE(x2)	
3	J47857-001	POCKET		
4	J47916-001	ADAPTOR PLUG		